

zation in many more individuals than those which constitute the differentiating features in *rubrinervis*, *scintillans*, *gigas*, *elliptica*, *subovata*, and others.

Again the inspection of the cultures made in Amsterdam and New York demonstrates that the last-named locality offers more favorable soil and climate for the evening-primroses. Correlated with this I am able to report that careful attention to the cultures has resulted in an increase of the proportion of mutants from the five per cent. maximum of de Vries to more than six per cent. in the last season, in the American cultures, and to say that some forms which did not reach maturity, and others which did not occur, in Amsterdam, may find in New York a climate in which they carry out their entire development. The cultures of Lamarck's evening-primrose now being carried on include 14 recognizable mutants, and it is pertinent to state that I have mutants of other species which will be duly described after they have completed a cycle of development.

All components of the environment may not be taken to be of equal value in the induction of new qualities, and I by no means wish to give the impression that the problem is on the point of being solved, but our hopes have been raised to the highest pitch that we may soon be able to discern the factors more or less directly concerned.

To be able to bring the causes operative in the formation and structural expression of qualities, that is, the moving forces of evolution, within the range of experimental investigation would be a triumph worthy the best effort of the naturalist; in that it would give us the power to give new positions to qualities and thus produce new organisms, its importance would rank well with that of any biological achievement of the last half century.

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A PASPALUM NEW TO THE WEST INDIES

BY GEORGE V. NASH

In working over some grass material secured by Mr. A. H. Curtiss (no. 379) on the Isle of Pines, just to the south of Cuba,

an interesting species of the genus *Paspalum* was encountered. It was impossible to correlate this with any of the known species of the West Indies, and a search among the South American forms revealed several specimens of a species from Brazil, the *Paspalum lineare* of Trinius. One of these specimens is no. 763 of Mr. Spencer Moore, who secured it in the Matto Grosso region. It was upon this number that Mr. Moore founded his *Panicum furcellatum* (Trans. Linn. Soc. II. 4: 505. *pl.* 34. *f.* 14-22), and I am at a loss to understand why the grass was described as a *Panicum*, for it has all of the characters of a *Paspalum*, as now understood,—a secund inflorescence and a spikelet of three scales—unless it be the occasional presence of a small fourth scale, an occurrence not uncommon in *Paspalum*. The specimen of Moore's 763, referred to above, which is in the herbarium of Columbia University, has but one or two of the spikelets with a fourth scale, the remainder possessing but three scales. Mr. Moore remarks that his species is "treacherously like *Paspalum tropicum* Doell and *P. Neesii* Kth.," and if Mr. Moore considers *Paspalum Neesii* Kth. synonymous with *P. lineare* Trin., I must consider the resemblance most treacherous, for I cannot distinguish the grasses.

Mr. Moore's plant came from Santa Cruz, better known in that region as Barra dos Bugres, a small town about one hundred miles to the northwest of Cuyabá. The specimen upon which *Paspalum lineare* was based was said by its author, Trinius, to have been secured by Langsdorff in Brazil, but no more definite location was given. In 1825, the Langsdorff expedition, of which Riedel was botanist, passed through the Matto Grosso region. Langsdorff and Riedel journeyed together as far as Cuyabá, where they separated, the latter proceeding eastward, while the former went to the northward, along the Arinos and Tapajos rivers. This course would have carried Langsdorff within a few miles of Santa Cruz, at which place Mr. Spencer Moore, sixty-seven years later, secured the material upon which he based his *Panicum furcellatum*.

A word as to the rather complicated history of the names which have been applied to this plant may not be out of place.

Trinius in 1826 (Gram. Pan. 99) published two species of *Paspalum*. The first of these appears as follows: "*Paspalum angustifolium* N. ab Es.! in Mart. Fl. Bras. ined." He remarks that it is similar to the following species, *P. lineare*, but differs especially in the smaller rugose spikelets; and remarks further that the name must be changed on account of the earlier name of Le Conte. In 1828, Trinius (Sp. Gram. Ic. 111) figures and again describes his *Paspalum lineare*, and cites, as of doubtful synonymy, the *P. angustifolium* N. ab Es. of his own publication (Gram. Pan. 99), adding in a footnote that what he had received previously under this name from Nees himself appears to be a different species on account of the much smaller spikelets which are subrotund-oblong, transversely rugose and without hairs at the base. The plate accompanying this description bears the name *Paspalum angustifolium*. In 1829 Nees (Fl. Bras. Enum. 64) published a *Paspalum angustifolium* which, judging from the description, is identical with the *Paspalum lineare* of Trinius, published three years previously, and indeed he makes the following citation: "*Paspalum lineare* Trin. ined." At the same time he publishes a variety β , characterizing it thus: "glumis transversim undulatis." As this rugose character of the spikelet was employed by Trinius in his publication of *P. angustifolium* to distinguish it from his *P. lineare*, Nees, by his procedure, attempted exactly to reverse the order of things. But whether Trinius was right or wrong in interpreting Nees really is of little consequence, for priority requires that we take up the species as characterized by Trinius in 1826; so the *Paspalum angustifolium* Nees (Fl. Bras. Enum. 64) becomes synonymous with *P. lineare* Trin., and the variety β must be considered the same as the *P. angustifolium* Nees (Trin. Gram. Pan. 99). In 1829 Kunth (Rev. Gram. 1: 25), probably aware that the name *angustifolium* was antedated by that of Le Conte, proposed another name for the species in the following manner: "*Paspalum Neesii*. (*Paspalum angustifolium* Nees ab Esenb.) Brasilia." He does not designate whether he meant the name published by Trinius for Nees or that published by Nees himself, so the former must be understood.

In the Index Kewensis the three names under discussion are

considered synonymous, and the two former, *P. angustifolium* and *P. lineare*, published in 1826, are referred to the *P. Neesii* Kunth, described in 1829, a rather queer procedure, where the rule is that the oldest binomial shall be taken up, for certainly, if it is necessary to unite *P. angustifolium* and *P. lineare*, the former being invalidated by the earlier publication of Le Conte's name, *P. lineare* is available.

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ONAGRA GRANDIFLORA (AIT.)* A SPECIES TO BE INCLUDED IN THE NORTH AMERICAN FLORA

BY ANNA MURRAY VAIL

In searching through several herbaria for specimens of *Onagra Lamarckiana* that had grown wild in North America, it became apparent that there was a large-flowered evening-primrose which, though closely related to *O. Lamarckiana*, could not be referred to that plant as it is known in Europe in the wild state and in cultivation.

The reference by Bartram † to a large-flowered evening-primrose seen near Tensaw, Alabama, suggested the possibility of finding the plant still growing in the locality where he found it in August, 1776. Professor S. M. Tracy kindly undertook the search for it, and on August 16, 1904, he re-discovered the locality, and the plant, described so vividly by Bartram as "the most pompous and brilliant herbaceous plant yet known to exist."

Abundant material was sent to the New York Botanical Garden and extensive cultures of *O. grandiflora* have been begun, in an attempt to establish its relation with its allies. Further details will be included in an article now in press.

Oenothera grandiflora Ait. was based on a plant introduced from North America by John Fothergill in 1778. The plate

**Onagra grandiflora* (Ait.) = *Oenothera grandiflora*, Ait. Hort. Kew. 2: 2. 1789.

† Bartram, William. Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee Country, the extensive territories of the Muscogulges or Creek Confederacy, and the Country of the Chactaws. Dublin, 1793 (reprinted from the Philadelphia edition of 1791), p. 404.